

# ODIS

IRRIGATION EQUIPMENT LTD.

## AUTOMATIC CIRCULATING FILTERS

SERIES

# 8000

Registered Patent

### APPLICATIONS

- Used as Control Filter in agriculture
- Automatic self cleaning filter
- Specifically designed for continuous trouble free operation



THE STANDARDS INSTITUTION OF ISRAEL

ODIS Filtration  is The Heart of Every Irrigation System

## DESCRIPTION

An automatic water screen filter specifically designed for trouble free operation. This Registered Patent filter continuously flushes the whole screen and keeps it clean during operation; as a result there is no increase in head loss during operation.

This is accomplished with a specially designed acceleration plate with four directional holes. The filter uses effectively the whole screen area due to the unique design of a spiral groove under the screen.

The filter includes a flushing controller activated at predetermined time intervals (field adjustable), to flush the residues accumulated in the collecting chamber.

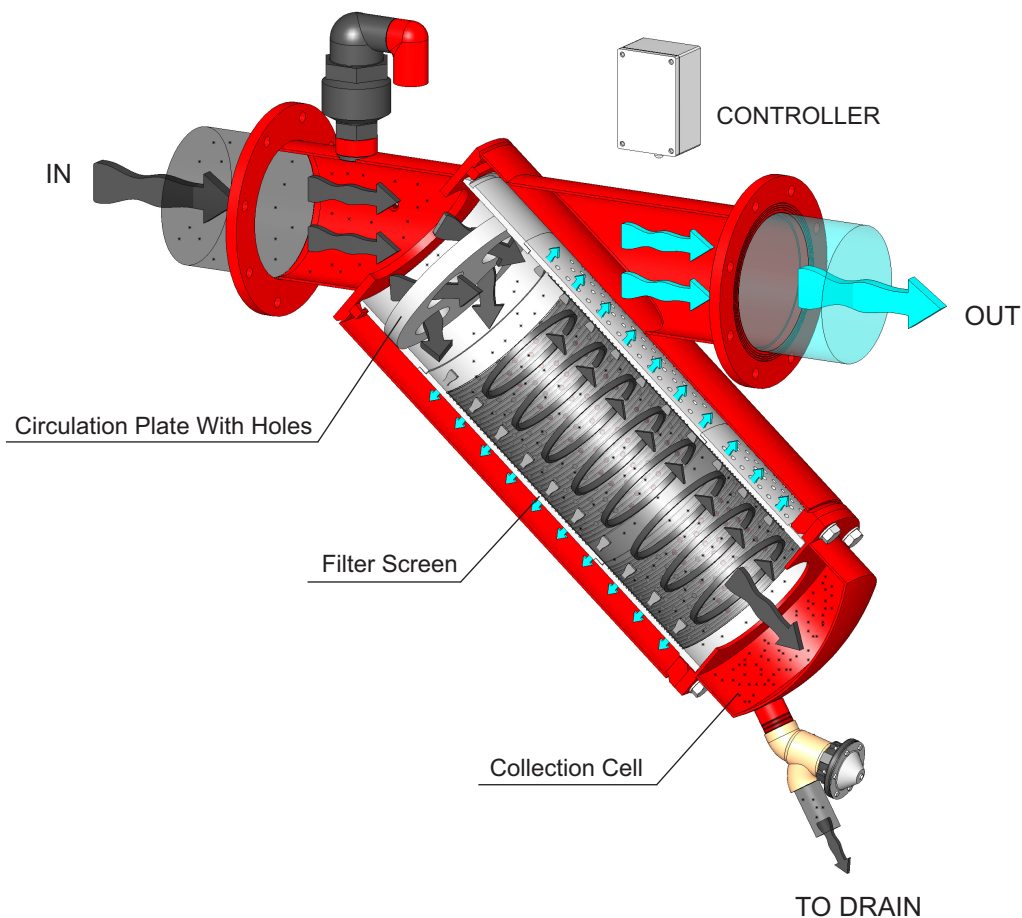
The residue collecting chamber is an integral part of the filter screen. It has a conical form which prevents back flow of the residues.

The lower recommended flow-rate can be adjusted by blocking one hole in the circulating plate with a rubber stopper.

Available in the following inlet sizes: 1½", 2", 3", 4", 6", 8", 10".

Available with three end connections: Thread (M), Flange (F), Victaulic (V).

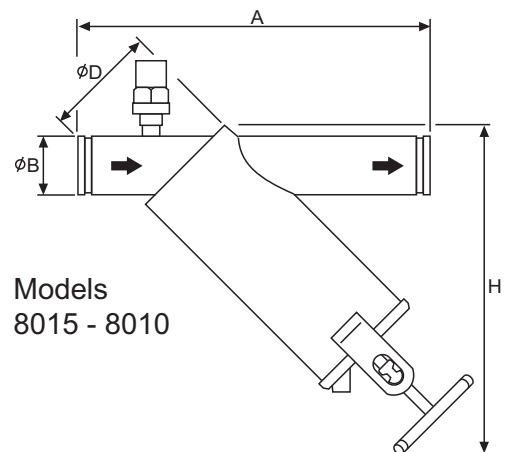
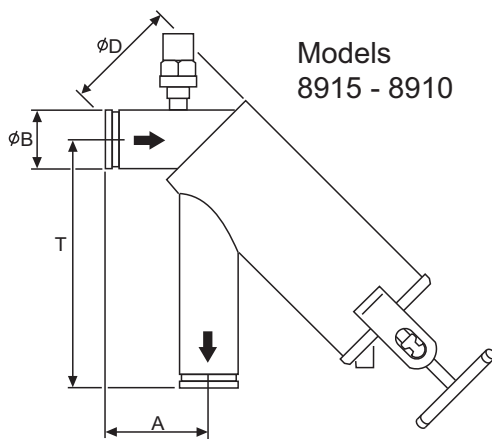
The filter has a 120 micron protective coating of extra durable polyester applied electrostatically and oven cured on a zinc-phosphate layer for maximal anti - corrosion protection.



**Dimensions & Weight**

Metric Units/ U.S. Units

Model	B		D	A		T		H		Weight	
	mm	inch	inch	mm	inch	mm	inch	mm	inch	kg	lbs
8015	40	1 1/2"	6"	370	14.5	-	-	640	23.5	16	36
8020	50	2"	6"	400	15.7	-	-	640	25.25	17	38
8030	80	3"	8"	525	20.7	-	-	720	28.25	29	64
8040	100	4"	8"	565	22.3	-	-	900	35.3	35	78
8060	150	6"	10"	735	28.9	-	-	1200	47.25	56	123
8080	200	8"	16"	875	34.5	-	-	1050	41.3	130	287
8010	250	10"	16"	1195	47	-	-	1100	43.3	175	387
8915	40	1 1/2"	6"	110	4.5	265	10.5	-	23.5	16	36
8920	50	2"	6"	120	4.7	280	11	-	25.25	17	38
8930	80	3"	8"	160	6.3	370	14.5	-	28.25	29	64
8940	100	4"	8"	135	5.3	410	16.25	-	35.3	35	78
8960	150	6"	10"	245	9.5	540	21.25	-	47.25	56	123
8980	200	8"	16"	270	10.6	900	35.5	-	41.3	130	287
8910	250	10"	16"	500	19.7	1000	39.4	-	43.3	175	387



## Recommended Flow Rates

Metric Units/ U.S. Units

Models	Inlet / Outlet Diameters		Recommended Flow Rate			
			3 Openings		4 Openings	
	inch	mm	m <sup>3</sup> /h	U.S. gpm	m <sup>3</sup> /h	U.S. gpm
8015/8915	1 1/2"	40	7 - 10	30 - 45	9 - 13	40 - 55
8020/8920	2"	50	13 - 19	55 - 85	18 - 25	80 - 110
8030/8930	3"	80	25 - 35	110 - 155	30 - 45	140 - 200
8040/8940	4"	100	40 - 60	180 - 255	55 - 75	235 - 330
8060/8960	6"	150	80 - 115	355 - 505	105 - 150	465 - 660
8080/8980	8"	200	165 - 230	760 - 1010	210 - 300	990 - 1310
8010/8910	10"	250	270 - 385	1270 - 1680	355 - 500	1650 - 2190

## Technical Data

- Recommended head loss: 0.25 - 0.5 bar ( 4 - 7.5 psi).
- Filter screen: Single highly reinforced stainless steel screen.
- Acceleration plate: plate with 4 directional holes accelerating the water velocity to selfclean the screen during operation.
- Rubber stopper: one rubber stopper only, for optional adjusting the water velocity to the actual flow rate, see Head Loss/Flow Rate chart.
- Integral residue collecting chamber.
- Conical form inlet to collecting chamber prevents backflow of residues.
- Filtering continuously with no increase in head loss.
- Automatic flushing controller, field adjustable with valve, flushes the residue from the collecting chamber.
- Maximal exploitation of the screen area as a result of the proprietary spiral groove backing the screen.
- Max. recommended working pressure: 8 bar (120 psi).
- Max. pressure: 10 bar (150 psi).
- Horizontal inlet/outlet, Models 8015(1 1/2"), 8020(2") , 8030(3"), 8040(4"), 8060(6"), 8080(8"), 8010(10").
- Horizontal inlet/vertical outlet, Models 8915(1 1/2"), 8920(2"), 8930(3"), 8940(4"), 8960(6"), 8980(8"), 8910(10").

## Protective Coating

120 micron extra-durable polyester, applied electrostatically and oven-cured on a zinc-phosphate layer for maximal anti-corrosion protection.

## Pressure Relief Valve

A pressure relief valve must be inserted before the filtering installation if pressure is not controlled effectively.

## End Connections

Thread (M)  
Flange (F)  
Victaulic (V)

- Each filter is designed and manufactured in order to achieve the highest standard of quality and finish.

## Stainless Steel Filter Screens

### Filtering Grades

Mesh Grade	mm	micron	Effective Filtering Area (%)
40	0.435	435	47
60	0.225	225	31
80	0.178	178	31
100	0.139	139	30
120	0.122	122	33
140 *	0.112	112	37
160 *	0.094	94	35
200 *	0.072	72	32

\* Mesh grades 140, 160, 200 on special request.

#### NOTES:

- Filters are supplied with one reinforced stainless steel screen specially designed for automatic filters.
- Recommended screen mesh grade: 40 - 120.

### How To Order Odis Automatic Filters

1. Type of filter required.
2. Catalog Number of filter.
3. Preferred mesh grade.
4. End connections: Thread (M)  
Flange (F)  
Victaulic (V)
5. Min. /max. pressure.
6. Maximal/Minimal Flow rate.
7. Additional accessories: Nipples/Valves/Non Return Valves/Gauges/Bleeder/Sediment Tank.
8. Filter arrays: see chapter 1.(\*)
9. Other than standard material, required for filter body and cover.
10. Special Coating Requirements.

\* An array of circulating filters is preferable in case that flow-rate is not constant.

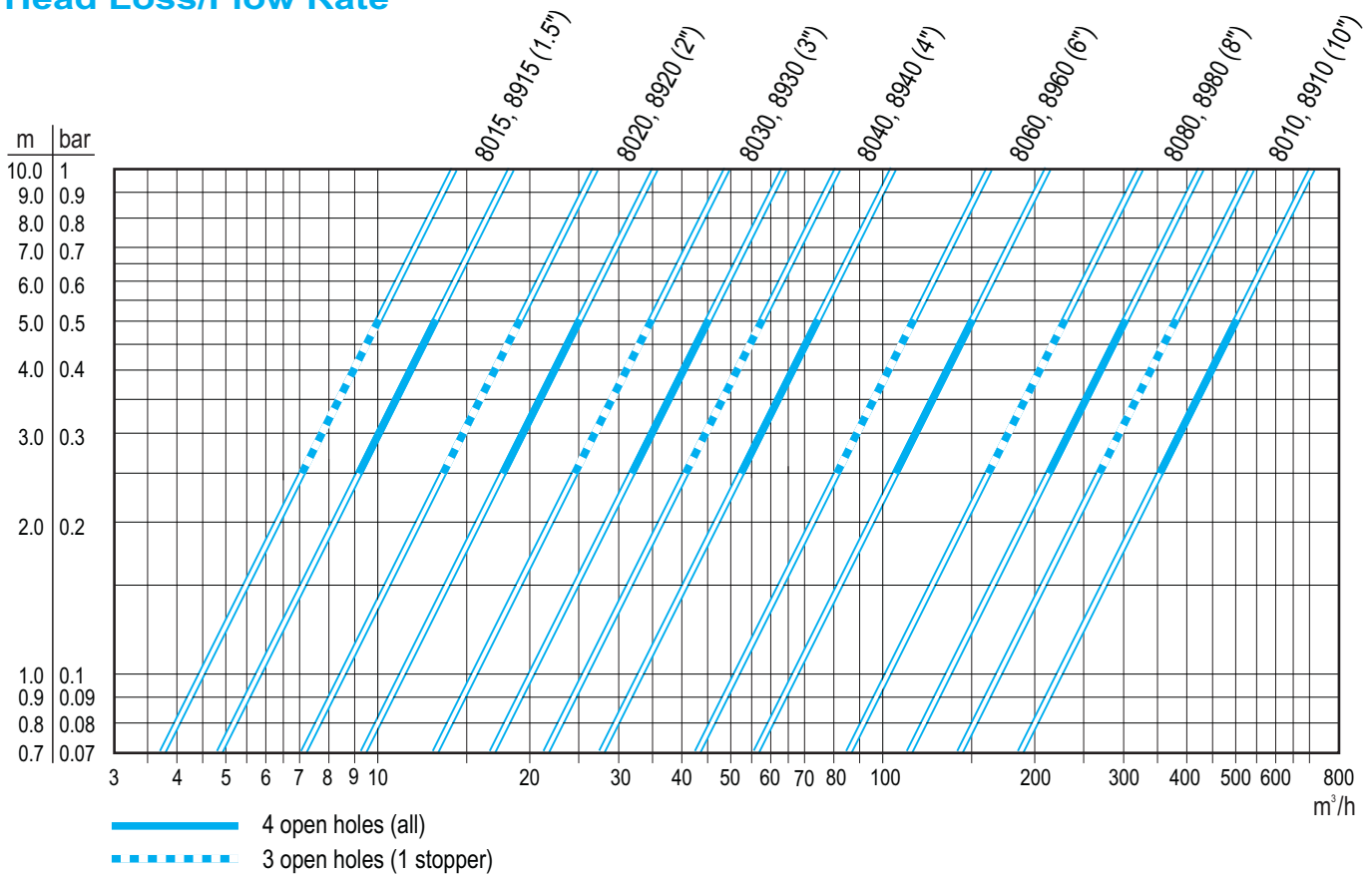
**HEAD LOSS/ FLOW RATE**

**Metric Units**

**Head Loss\*\***

Models	Head Loss dP (bar)						Head Loss dP (bar)						
	0.25	0.3	0.4	0.5	0.6	0.7	0.25	0.3	0.4	0.5	0.6	0.7	
	Flow rate Q (m <sup>3</sup> /h)						Flow rate Q (m <sup>3</sup> /h)						
8015/ 8915	9	10	11.5	13	14	15.5	7	7.5	9	10	10.5	11.5	
8020/ 8920	18	19	22	25	27	30	13	15	17	19	21	22	
8030/ 8930	32	35	40	45	49	53	25	27	31	35	38	41	
8040/ 8940	53	58	67	75	82	89	41	45	52	58	64	69	
8060/ 8960	106	116	134	150	164	177	81	89	103	115	126	136	
8080/ 8980	210	230	270	300	330	355	165	180	205	230	255	275	
8010/ 8910	355	390	450	500	550	590	270	295	345	385	420	455	
	<b>Recommended Range</b>						<b>Recommended Range</b>						
	4 Open holes (all)						3 Open holes (1 Stopper)						

**Head Loss/Flow Rate\*\***



\*\* For a clean filter and 120 mesh screen.

■ 1 bar=100 kPa=1.02 kg/cm<sup>2</sup>=10.2 m (W.C)=14.5 psi

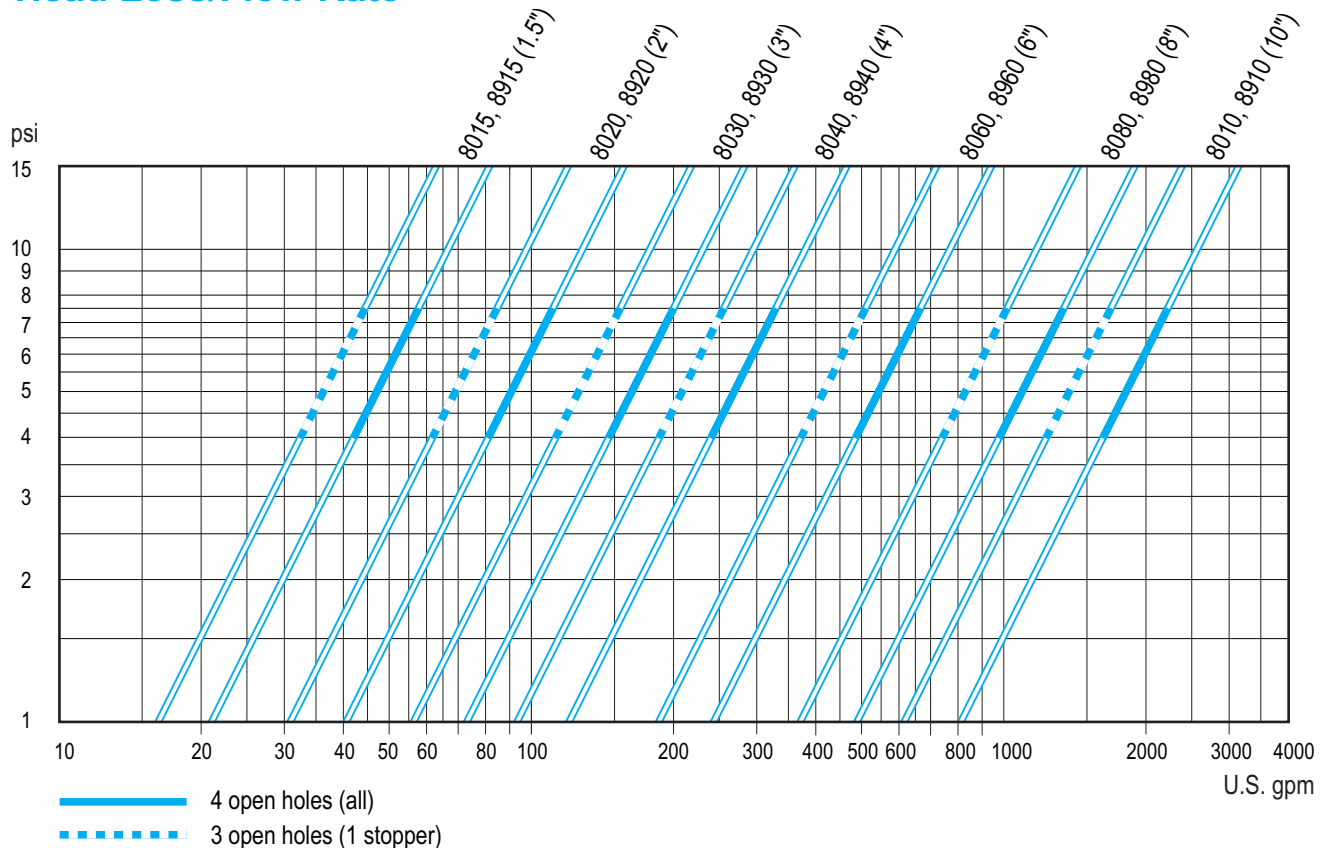
**HEAD LOSS/ FLOW RATE**

**U.S. Units**

**Head Loss \*\***

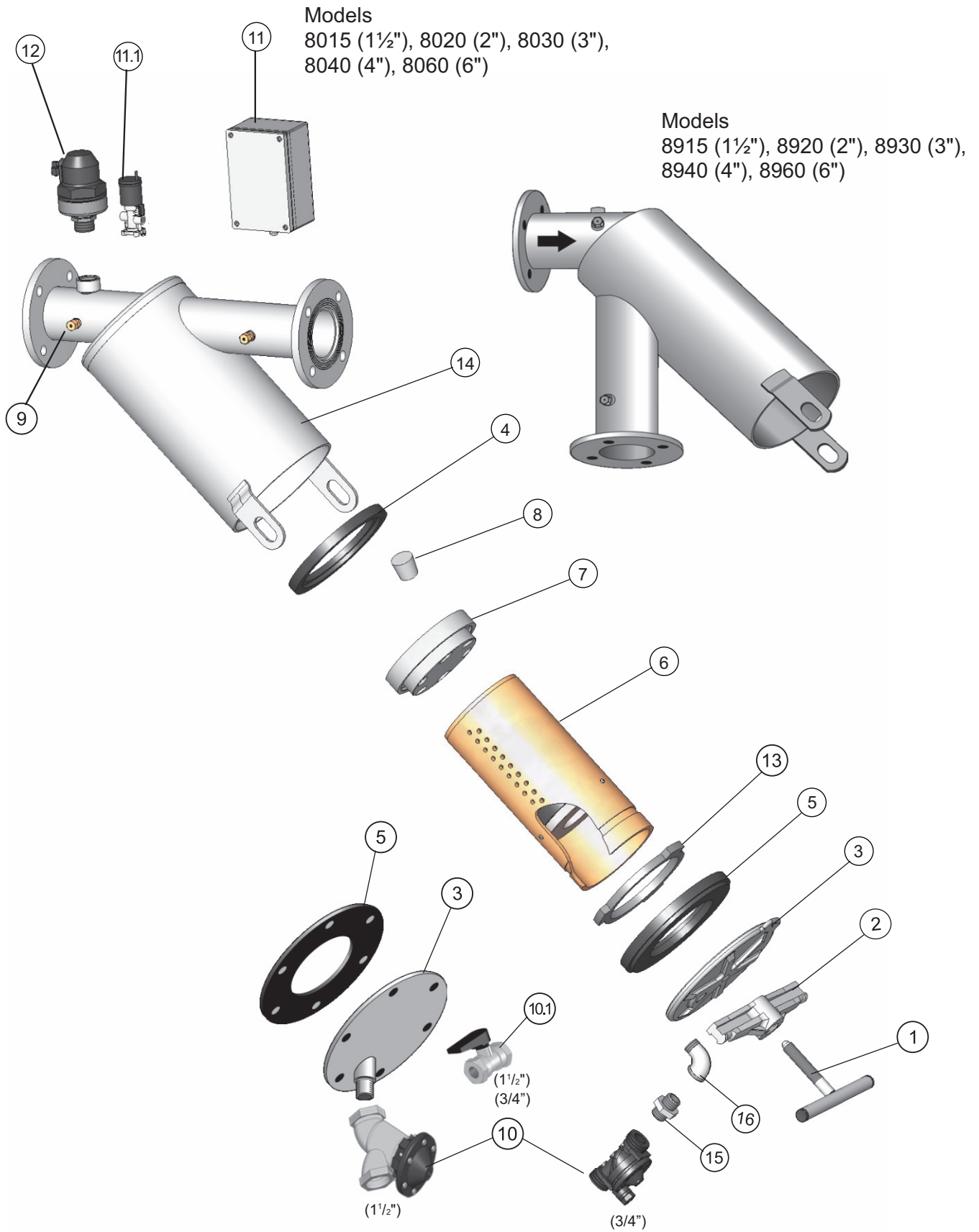
Models	Head Loss dP (psi)						Head Loss dP (psi)					
	4	5	6	7	8	10	4	5	6	7	8	10
	Flow Rate Q (U.S. gpm)						Flow Rate Q (U.S. gpm)					
8015/ 8915	44	48	52	56	60	65	33	35	39	42	45	50
8020/ 8920	75	85	100	110	125	130	60	65	75	85	95	100
8030/ 8930	140	135	180	202	220	240	105	120	140	155	170	185
8040/ 8940	230	260	300	336	370	400	175	200	230	260	285	300
8060/ 8960	460	520	600	670	735	795	350	400	460	515	565	610
8080/ 8980	990	1110	1210	1310	1400	1570	760	850	930	1010	1080	1210
8010/ 8910	1650	1850	2020	2190	2340	2610	1270	1420	1550	1680	1790	2010
	<b>Recommended Range</b>						<b>Recommended Range</b>					
	4 Open holes (all)						3 Open holes (1 Stopper)					

**Head Loss/Flow Rate \*\***



\*\* For a clean filter and 120 mesh screen.

■ 1 psi=0.069 bar=6.9 kPa=0.07 kg/cm<sup>2</sup>=0.7 m (W.C)





**Catalog Numbers**

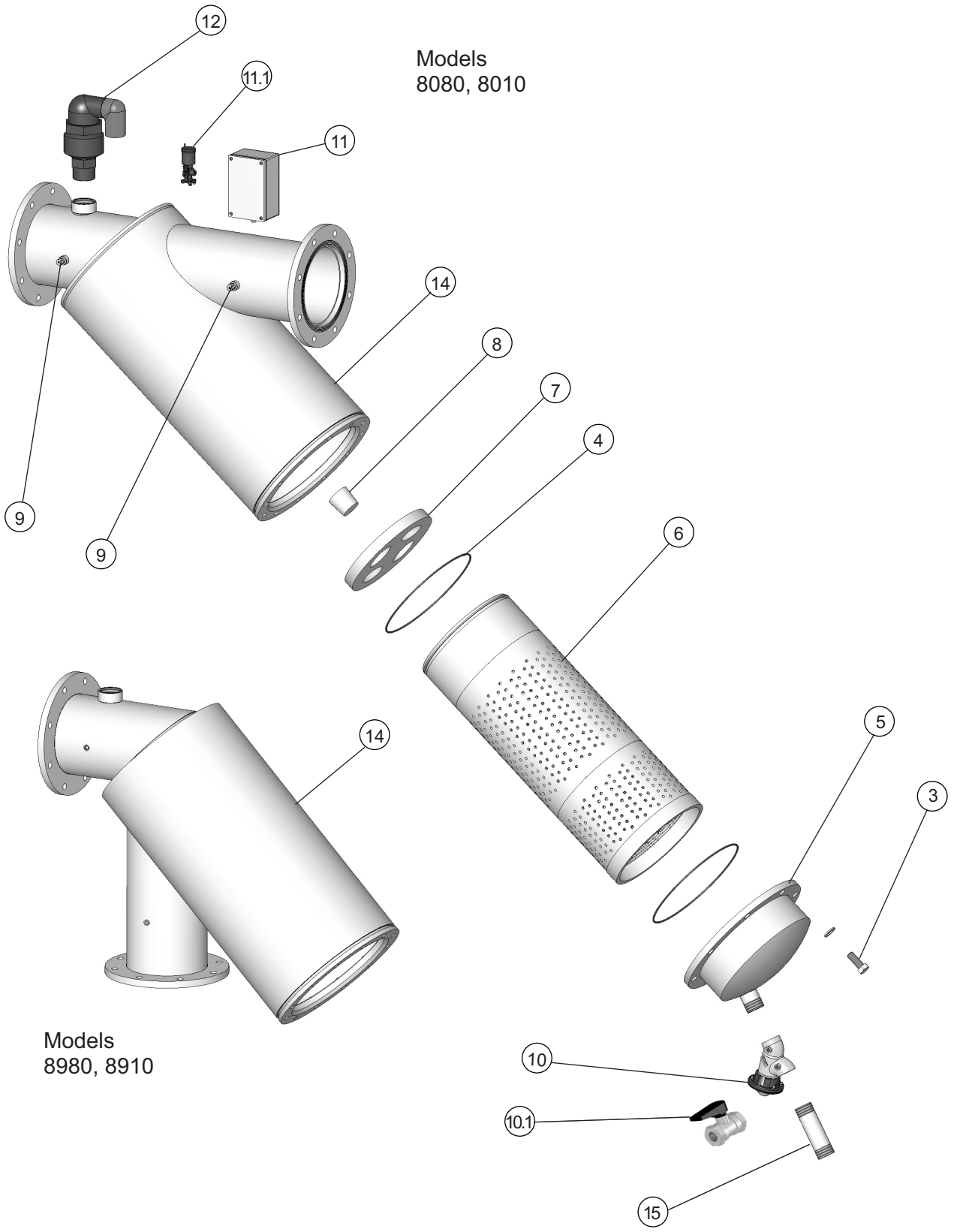
Part No.	Description	Model				
		8015 (1½") 8915 (1½")	8020 (2") 8920 (2")	8030 (3") 8930 (3")	8040 (4") 8940 (4")	8060 (6") 8960 (6")
1	Handle	E000100	E000100	E000100	E000100	-
2	Tightening Bracket	E000216	E000216	E000218	E000218	-
3	Cover	E000226-SFR	E000226-SFR	E001281	E001281	E806200**
4	Neoprene Inner Gasket	E000820	E000820	E000830	E000830	E000860
5	Neoprene Cover Gasket	E000920	E000920	E000930	E000930	E000960
6	Filter Screen*	E000481	E000482	E000483	E000484	E000486
7	Acceleration Plate	E000581	E000582	E000583	E000584	E000586
8	Rubber Stopper	E315700	E320700	E340700	E350700	E370700
9	Pressure Testing Port	E000800	E000800	E000800	E000800	E000800
10	Hydraulic Drain Valve	NB20507502T (¾")	NB20507502T (¾")	NB20507502T (¾")	NB20507502T (¾")	NB30001501T (1½")
10.1	Manual Drain Valve	PM1075110 (¾")	PM1075110 (¾")	PM1075110 (¾")	PM1075110 (¾")	PM1150020 (1½")
11	Flushing Controller 12VDC	N53102FT11	N53102FT11	N53102FT11	N53102FT11	N53102FT11
11.1	Solenoid 12VDC -Latch	N512026	N 512026	N512026	N512026	N512026
12	Air Valve	E000 910 (½")	E 000 910 (½")	N12301 (1")	N12301 (1")	N12402 (2")
13	Centering Piece	-	-	E 007 391	E007391	E007392
14	Filter Body	A8015 A8915	A 8020 A 8920	A 8030 A 8930	A 8040 A 8940	A 8060 A 8960
15	Adapter	H4607BSP	H4607BSP	H4607BSP	H4607BSP	-
16	Elbow	H87007BSP	H87007BSP	H87007BSP	H87007BSP	-

\* When ordering, please specify screen mesh.

\*\* Models 8060, 8960 are supplied with bolted covers.

■ Aimed at continued improvement, ODIS reserves the right to change specifications without prior notice.

**ILLUSTRATED PARTS BREAKDOWN**



Models  
8080, 8010

Models  
8980, 8910

**Catalog Numbers**

Part No.	Description	Model	
		8080 (8") 8980 (8")	8010 (10") 8910 (10")
3	Cover	E808001	E808001
4	Inner Gasket	ER05026	ER05026
5	Cover Gasket	ER06072	ER06072
6	Filter Screen *	E000487	E000488
7	Acceleration Plate	E000587	E000588
8	Rubber Stopper	E370710	E370711
9	Pressure Testing Port	E000800	E000800
10	Hydraulic Drain Valve	NB30001501T (1½")	NB30001501T (1½")
10.1	Manual Drain Valve	PM1150020 (1½")	PM1150020 (1½")
11	Flushing Controller - DC	N53102FT11	N53102FT11
11.1	Solenoid 12V-DC- Latch	N512026	N512026
12	Air Valve	N12402 (2")	N12402 (2")
14	Filter Body	A8080 A8980	A8010 A8910
15	PVC Nipple	H6215151	H6215151

\* When ordering, please specify screen mesh.

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## GENERAL INSTRUCTIONS

### Operation

- Optimal filtration is achieved at the correct flowrate (see page 4), when the pressure difference between inlet and outlet is 0.25 - 0.5 bar ( 4 - 7.5 PSI).
- Measure the pressure difference on the filter during irrigation by inserting pressure gauge with needle into pressure testing ports in inlet and outlet.
- If pressure difference is too low, block one hole in the circulating plate with the included rubber stopper.
- Adjust the flushing controller according to its instructions.  
Recommended time intervals:  
Flushing duration: 10 -25 seconds  
Between flushings: 30 - 120 minutes  
When residue quantities are high, shorten the time between flushings.
- Verify that the controller is operational by activating it manually.

### Installation

- The filter's body should point downwards with its drain valve at its lowest point.
- Install the filter paying special attention to the correct flow of water (inlet, outlet), as indicated by the direction arrows.
- Install the integrated air relief-vacuum breaker valve.
- If back flow occurs (i.e. when the pump has stopped or the field elevation is higher than the filter), install a quick-acting (mechanical) non-return valve.
- If more than one filter are installed (filters' array), leave sufficient space between the units to facilitate the maintenance.
- Specially designed ODIS manifolds (Series 9000) are available for mounting filtration arrays.
- If the pressure is not controlled effectively and might increase above 8 bar, a pressure relief valve must be installed before the filter's installation.
- Insert the batteries inside the flushing controller and close the cover tightly.

### Periodic Cleaning

Clean the filter screen (6) every month, at the end of the irrigation season or when the filter is clogged as a result of incorrect operation.

- Close valve at the inlet of filter.
- Open drain valve (10) manually to release pressure within filter and drain.
- Remove cover (3) and gently remove screen (6).
- Rinse filter screen thoroughly with clean water, using a brush to remove particles from screen (**do not use a wire brush**).
- Verify that filter screen is intact and undamaged.

After cleaning assemble as follows:

- Place acceleration plate (7) in its location on the screen.
- Place inner gasket (4) on the plate.

## Periodic Cleaning

### For Models 8015 (1½"), 8020 (2"), 8915 (1½"), 8920 (2")

- Place cover gasket (5) on the other edge of the screen.
- Carefully replace assembly into filter housing and tighten cover gasket to housing.
- Place cover (3) and tighten properly.

### For Models 8030 (3"), 8040 (4"), 8060 (6"), 8930 (3"), 8940 (4"), 8960 (6")

- Place centering piece (13) in its groove.
- Carefully replace assembly into filter housing, rotate slightly till centering piece is retained on step and tighten cover gasket to housing.
- Place cover gasket (5).
- Place cover (3) and tighten properly.

### For Models 8080 (8"), 8010 (10"), 8980 (8"), 8910 (10")

- Inner gasket (4) is located in a groove on the screen edge, and the cover gasket (5) is located in a groove inside the cover.
- Place carefully screen assembly into filter's body.
- Place cover (3) verify that covers gasket (5) is in its groove, and tighten the cover properly.

## WARNING

- Do not tighten or open cover during operation or under pressure.

## Maintenance

- Each filter is supplied with maintenance instructions, as well as assembly, installation and operation instructions.
- Apply a layer of grease to thread of handle (1) or to bolt threads - Models 8060, 8960 (6"), 8080, 8980 (8"), 8010, 8910 (10").
- Any damage to the protective coating of filter must be repaired without delay.
- Prior to the application of the protective paint, thoroughly clean the damaged spot with wire brush.

**PACKING / SHIPPING DATA**
**Metric Units**

Model	Inlet / Outlet (inch)	Gross* Weight (kg)	Packaging	Gross Volume (m <sup>3</sup> )
8015/ 8915	1½"	18	Packed in a carton	0.078
8020/ 8920	2"	19	Packed in a carton	0.078
8030/ 8930	3"	31	Packed in a carton	0.110
8040/ 8940	4"	37	Packed in a carton	0.144
8060/ 8960	6"	58	Packed in a carton	0.280
8080/ 8980	8"	173	Packed on a pallet	1.1
8010/ 8910	10"	238	Packed on a pallet	1.6

**U.S. Units**

Model	Inlet / Outlet (inch)	Gross Weight (lbs)	Packaging	Gross Volume (cu.ft)
8015/ 8915	1½"	40	Packed in a carton	2.78
8020/ 8920	2"	42	Packed in a carton	2.78
8030/ 8930	3"	68	Packed in a carton	3.9
8040/ 8940	4"	82	Packed in a carton	5.1
8060/ 8960	6"	128	Packed in a carton	10.0
8080/ 8980	8"	381	Packed on a pallet	39
8010/ 8910	10"	525	Packed on a pallet	57

\* Gross weight includes packaging materials.